Quarterly Surveillance Report
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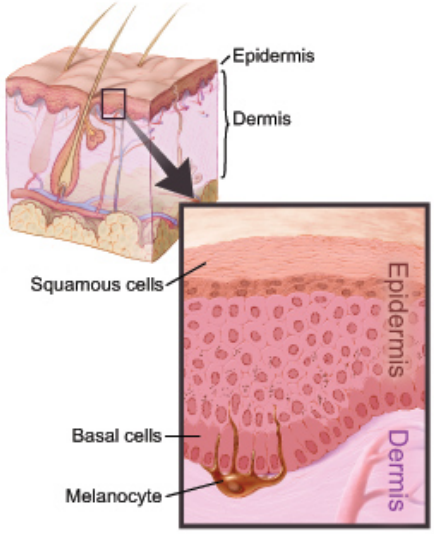
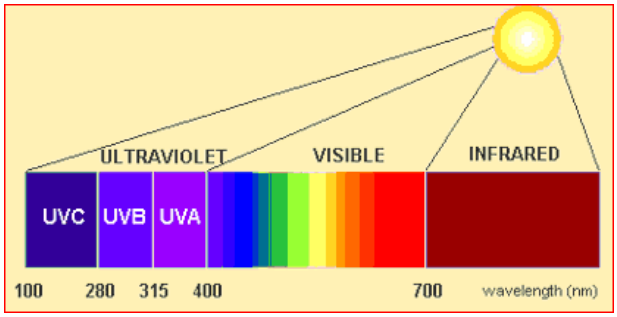
Skin Cancer in Montana
Sun Screen is Not Enough

There are three general types of skin cancer. The most common are squamous cell and basal cell cancers of the epidermis. These types of cancer are often superficial and have an excellent prognosis when diagnosed and treated promptly. Malignant melanoma, arising from the melanocytes that lie between the epidermis and dermis, is less common but much more serious and has a poorer prognosis.[1]



Ultraviolet radiation is part of the spectrum of energy from the sun, and also of artificial sources such as sun lamps and tanning beds. It is the primary environmental risk factor for all types of skin cancer. Ultraviolet radiation falls between visible light and x-rays in the



[1] Image from the National Cancer Institute website, www.cancer.gov

total energy spectrum. It is divided into A (UVA), B (UVB), and C (UVC) wavelengths. Ultraviolet light penetrates overcast skies and untreated glass. UVA and UVB wavelengths also penetrate the surface layers of the skin and cause varying degrees of damage. Darkening of the skin, or tanning, is visible evidence of this damage. Damage to the skin can happen well before sunburn occurs. Sunburn signals severe damage to the skin. The consequences of this damage include premature aging of the skin and increased risk of skin cancer.

The light sources in indoor tanning units emit significant amounts of UVA and UVB radiation, identical to the components of natural sunlight that are responsible for both tanning and skin damage that increases the risk of skin cancer. Because tanning is the skin's response to UVA and UVB radiation exposure, tanning beds cannot produce results without exposure to these wavelengths. The US Department of Health and Human Services lists UV radiation from artificial light sources such as tanning beds and sun lamps as a documented carcinogen.[2]

The risk for developing skin cancers of all types begins early in life and the effects of exposure to ultraviolet radiation are cumulative. Therefore children should be protected from the sun from an early age and protective measures should continue throughout the teen and adults years. Children and adolescents usually have more opportunity for exposure than adults. The Centers for Disease Control and Prevention recommends a comprehensive, community-based skin cancer prevention program that includes policy implementation in child care centers and schools to protect children from sun exposure and teach them sun-protective behaviors.[3]

Individuals who sunburn easily, those with fair skin, red or blonde hair, freckles, and light eyes are at greater risk than darker skinned people, but anyone can get skin cancer. Skin cancer can occur in people of all ages. Squamous cell and basal cell skin cancers are most often diagnosed after the age of 50; melanoma may be diagnosed at an earlier age.

Individuals with a large number of moles are at increased risk of developing melanoma. Moles are formed from clusters of melanocytes (cells that make pigment) and surrounding tissues. Moles are common and most are benign. However, changes in the appearance of a mole are warning signs and should be evaluated by a doctor.

Additional risk factors for skin cancer include chronic skin inflammation or skin ulcers, drugs that increase sensitivity to ultraviolet radiation, conditions that depress the immune system, and some medical syndromes such as xeroderma pigmentosum, albinism, basal cell nevus syndrome, actinic keratosis, and Bowen's disease. All of these are rare conditions and even in combination account for only a small proportion of skin cancer.

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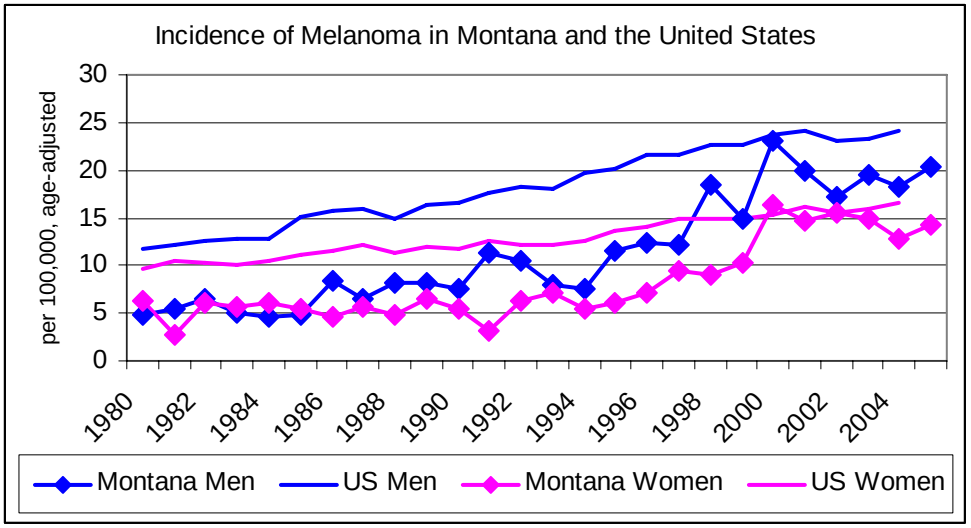
[2] 11th Report on Carcinogens, National Toxicology Program, US Department of Health and Human Services, http://ntp.niehs.nih.gov/index.cfm?objectid=32BA9724-F1F6-975E-7FCE50709CB4C932

[3] Saraiya et al., 2004, *Am J Prev Med* 27:422-466.

By far the most common risk factor for all types of skin cancer is exposure to the sun and other sources of ultraviolet radiation. The National Cancer Institute, the American Cancer Society, and the American Academy of Dermatology all endorse the following preventive measures:

- Avoid exposure to the sun in peak hours, from 10:00 a.m. to 4:00 p.m.
- If you must be outdoors,
  - ✓ seek shade;
  - ✓ wear a tightly woven, long-sleeved shirt and long pants;
  - ✓ wear a wide-brimmed hat;
  - ✓ wear sunglasses that block UVA and UVB radiation;
  - ✓ use sunscreen of SPF 15 or greater generously and according to label directions;
    - ❖ Sunscreen is a supplement to other protective measures, not a substitute for them.
- Avoid deliberate tanning, either outdoors or in tanning beds.
- Perform skin self-examinations regularly, including areas of the skin not routinely exposed to the sun.[4]

Malignant melanoma is reportable to the Montana Central Tumor Registry, although squamous cell and basal cell skin cancer are not. The incidence of malignant melanoma has been increasing in Montana and the United States for the past 25 years. Montana's reported incidence rates have been lower than the national rates for most of this period. Men are more likely to develop malignant melanoma than women, possibly because they are more likely to have greater sun exposure.



[4] Detailed instructions for performing a skin self-examination are available on the National Cancer Institute website at http://www.cancer.gov/cancertopics/wyntk/skin

In Montana, the sex ratio for malignant melanoma has been constant for the past 25 years at about 59% male, and the average age at diagnosis has consistently been in the early 60s. There has been an apparent increase in the number of reported cases diagnosed per year, which more than doubled from an average of 163 per year between 1990 and 1995, to 342 per year between 2000 and 2005. While this increase in reported cases is noteworthy, it may be the result of diagnostic improvements and better reporting. There has also been a corresponding trend toward earlier diagnosis. Between 1990 and 1995, only 8% of cases were diagnosed *in situ* and 80% were diagnosed at the local stage. Between 2000 and 2005, 24% of cases were diagnosed *in situ* and 64% we diagnosed at the local stage. Nevertheless, the proportion of cases diagnosed at the regional or distant stage, with a poor prognosis for survival, has been constant at 12% since the inception of the Montana Central Tumor Registry.

The National Cancer Institute publishes two on-line booklets, *What You Need to Know About Skin Cancer* and *What You Need to Know About Melanoma*, that contain detailed information about risk factors, prevention, symptoms, diagnosis, and treatment of skin cancers. These publications are available at

http://www.cancer.goc/cancertopics/wyntk/skin

http://www.cancer.gov/cancertopics/wyntk/melanoma

Please visit our website at www.cancer.mt.gov

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